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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,307	09/09/2003	Michiharu Yamamoto	NDTCO.022A	2141

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EXAMINER

KUGEL, TIMOTHY J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/658,307	Applicant(s) YAMAMOTO ET AL.	
	Examiner Timothy J. Kugel	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 13, 25 and 26 is/are pending in the application.
 4a) Of the above claim(s) 25 and 26 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1 and 13 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☒ Claim(s) 1, 13, 25 and 26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 13, 25 and 26 are pending as amended on 10/20/2005, claims 2-12 and 14-24 being cancelled. Claims 25 and 26 are withdrawn from consideration.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. This application contains claims 25 and 26 drawn to an invention nonelected without traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

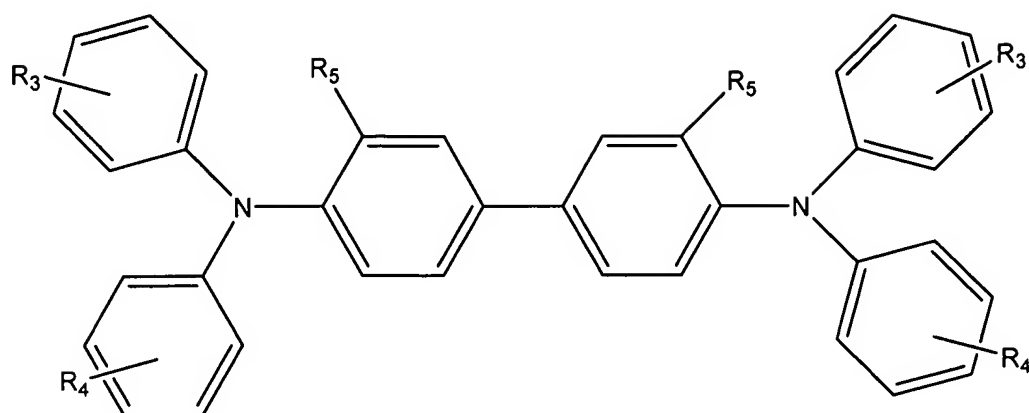
4. Claims 1 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Woong Sang Jahng et al., Synthesis and Characterization of Hole-transport Materials in Polysiloxane, *Mat. Cryst. Liq. Cryst.*, Vol. 377 pp. 329-332 (Jahng hereinafter) in view of Japanese Patent 10-333195 (Hisaya hereinafter), US Patent 2,774,697 (Koblitz hereinafter) and applicant's admission.

Jahng teaches hole-transporting polysiloxane polymers with pendant triphenylamine groups (All).

Jahng does not disclose expressly the elected pendant group.

Hisaya discloses a photorefractive material composition comprising a polymer with pendent groups of the formula

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wherein R₃ is

H, p-Me, p-Et etc.; R₄ is H, m-Me, p-Me, p-Et, o-Me etc.; and R₅ is H, Me etc (Abstract, ¶0009, Formula 2).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the pendant group of Hisaya on the polysiloxane backbone of Jahng. The motivation to do so would have been to improve the speed of the photorefractive response (Hisaya ¶0004).

Jahng does not disclose expressly the use of a plasticizer.

Koblitz discloses the use of a plasticizer in polysiloxane compositions (Column 3 Lines 8-11).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include the plasticizer of Koblitz in the composition of Jahng. The motivation to do so would have been to improve the flow of the composition.

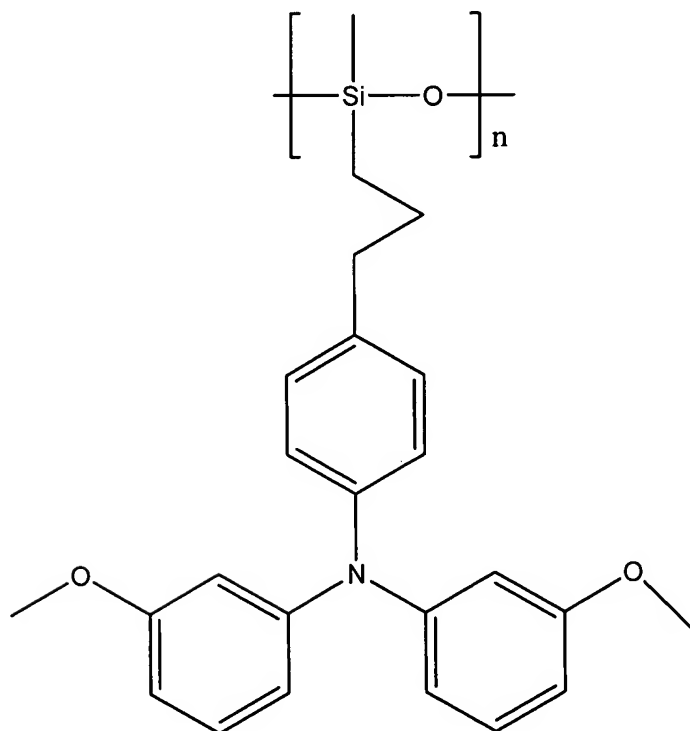
Jahng does not disclose expressly the use of sensitizers, but applicant admits that the addition of sensitizer materials is known in the art (Disclosure Page 2 ¶3).

Response to Arguments

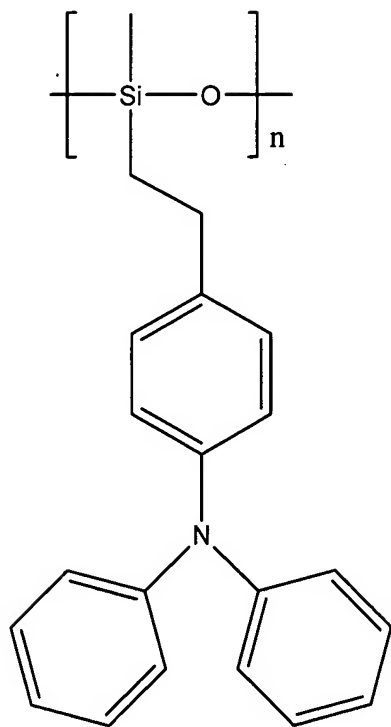
5. Applicant's arguments filed 18 May 2006 have been fully considered but they are not persuasive.

Applicant argues that there is no motivation to combine the teachings of the references as D. Wright et al., "Photorefractive Properties of Poly(siloxane)-triarylamine-Based Composites for High Speed Applications", J. Phys. Chem. B 2003, 107, 4732-4737 (Wright hereinafter) teaches that the polymer of Jahng has a T_g of 25°C which is "too low to be used with the concentrations of chromophore normally employed in photorefractive polymer composites" (Wright Page 4733 First Column Second Paragraph).

This argument is not persuasive because Wright does not teach a polymer of the same structure of Jahng. Wright teaches a polymer of the structure:



, whereas Jahng teaches polymers of



the structure: without the methoxy groups on the pendant triphenylamine groups and with one fewer methyl group between the backbone siloxane and the pendant triphenylamine groups.

Further, even if Wright taught the T_g of the polymer of Jahng, Wright teaches that the T_g of the Wright polymer is "too low to be used ***with the concentrations of chromophore normally employed*** in photorefractive polymer composites" (emphasis added) while the instant claims do not specify a concentration of chromophore.

Finally, Wright teaches a polymer doped with a chromophore whereas the combined teachings of Jahng and Hisaya results in a polymer with intrinsic photochromic activity.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached 6:00 AM – 4:30 PM Monday-Thursday.

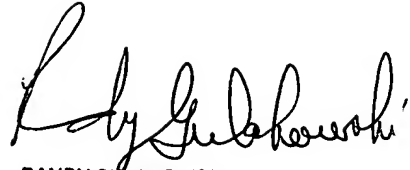
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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